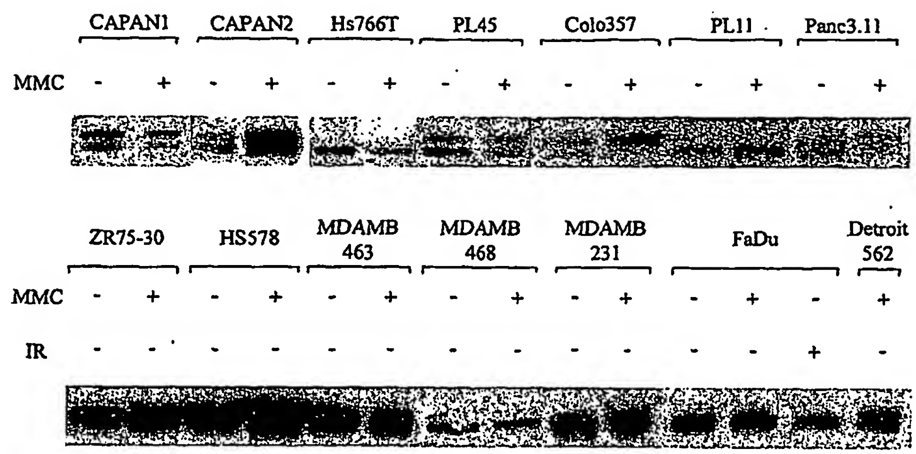

Figure 1: Screen for Fanconi Anemia defects by Fancd2 monoubiquitination assay. Equal cell numbers were untreated, or incubated with MMC for18-20 hours, or irradiated with 15 Gy and incubated for 2 hours, after which protein lysates were made. Protein lysates were immunoblotted for Fancd2. Lack of the upper band indicates a defect in the proximal Fanconi pathway.

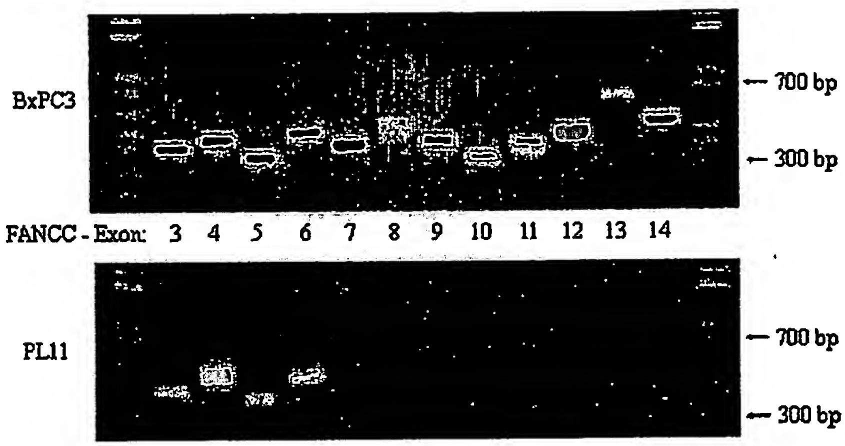

Figure 2: Homozygous deletion of exons 7-14 in pancreatic cancer cell line PL11. DNA from pancreatic cancer cell line BxPC3 was used as a control; exons for both samples were amplified in the same PCR plate. Independent reactions were used to confirm the deletion in PL11 and in the parallel xenograft PX192.

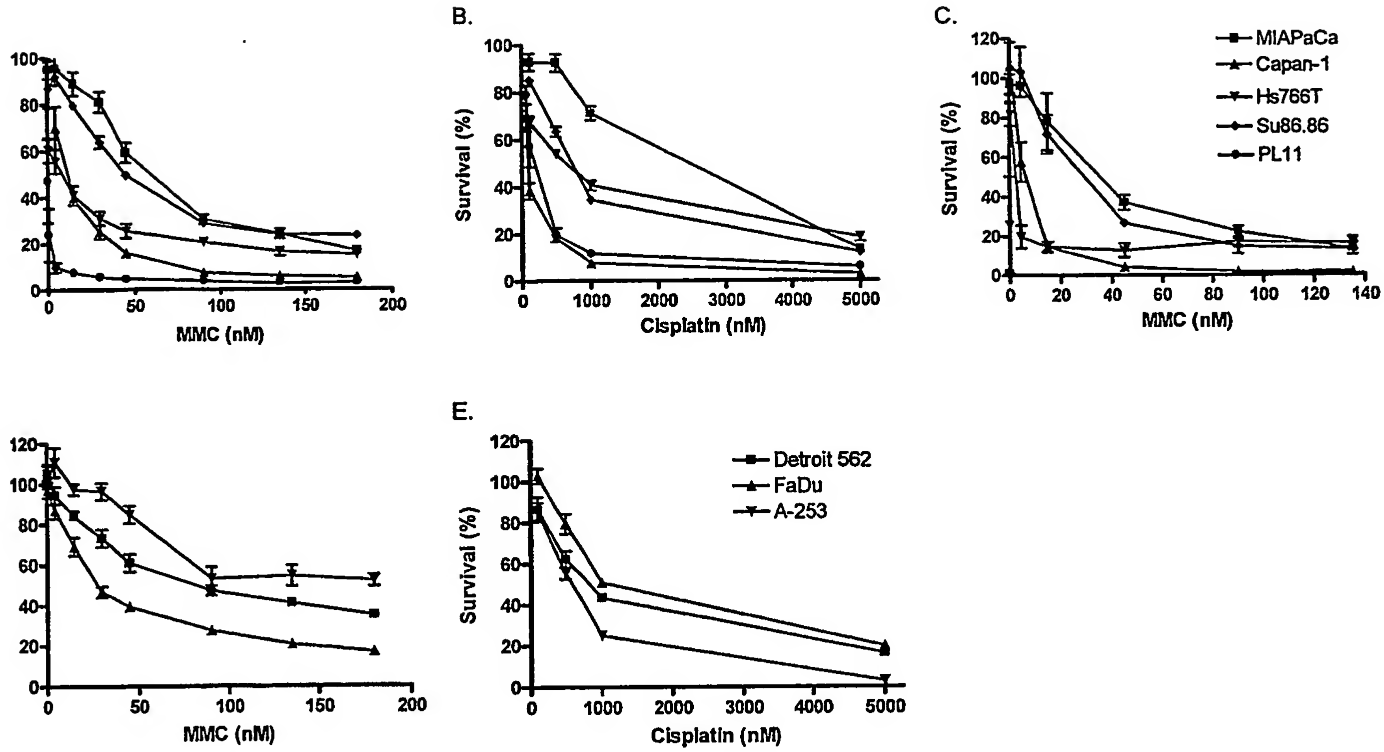

Fig. 3 FA-defective cell lines are hypersensitive to crosslinking agents. ***a.*** MMC sensitivity of pancreatic cancer cell lines as measured by population quantitation using a measurement of total DNA. ***b.*** Cisplatin sensitivity of pancreatic cancer cell lines by DNA quantitation. ***c.*** MMC sensitivity of pancreatic cancer cell lines as measured by manual cell counts. ***d.*** MMC sensitiviy of HNSCC cell lines by DNA quantitation. ***e.*** Cisplatin sensitivity of HNSCC cell lines by DNA quantitation. Legends are consistent throughout ***a.–c.*** and ***d.–e.***

10/540904

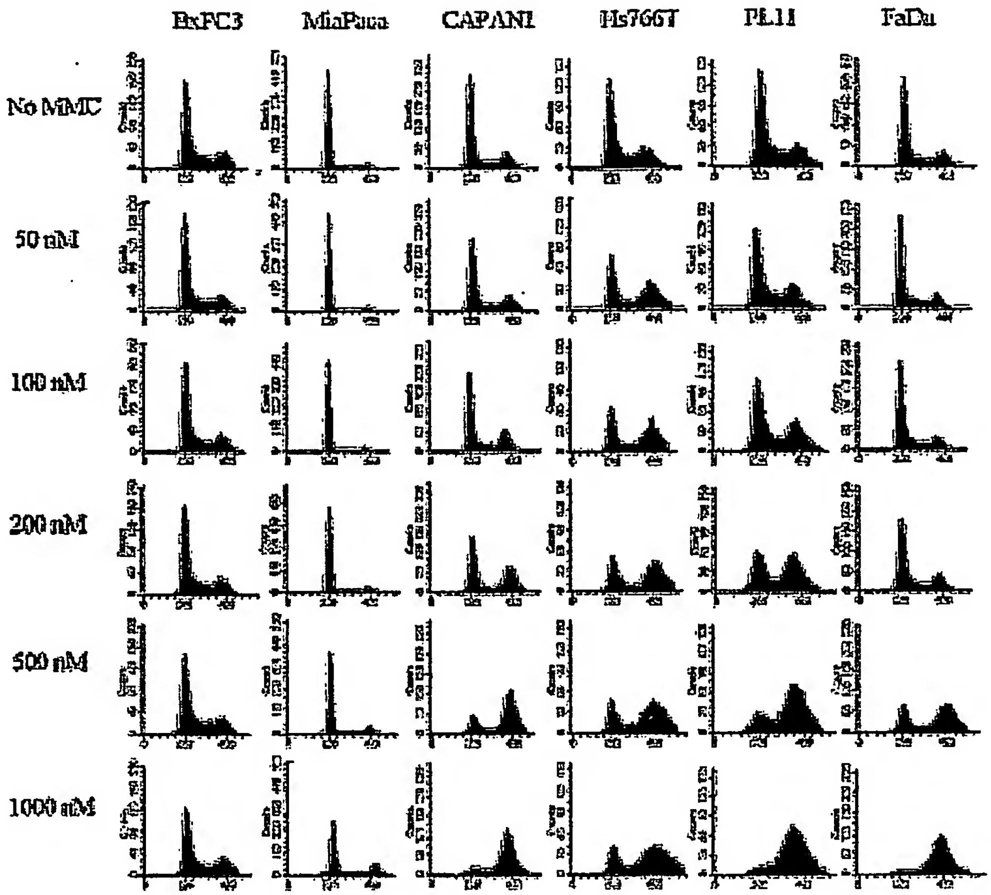

Figure 4: FA-defective cancer cell lines arrest in G2/M 48 hours after low concentrations of MMC. Cells were treated with various concentrations of MMC for 2 hours, and incubated without MMC for 48 hours, after which the cell cycle was analyzed using a flow cytometer.

10/540904

FANCA Reference cDNA Sequence
FIGURE 5A

```
ATGTCCGACTCGTGGGTCCCGAACTCCGCCTCGGGCCAGGACCCAGGGGG 50
CCGCCGGAGGGCCTGGGCCGAGCTGCTGGCGGGAAGGGTCAAGAGGGAAA 100
AATATAATCCTGAAAGGGCACAGAAATTAAAGGAATCAGCTGTGCGCCTC 150
CTGCGAAGCCATCAGGACCTGAATGCCCTTTTGCTTGAGGTAGAAGGTCC 200
ACTGTGTAAAAAATTGTCTCTCAGCAAAGTGATTGACTGTGACAGTTCTG 250
AGGCCTATGCTAATCATTCTAGTTCATTTATAGGCTCTGCTTTGCAGGAT 300
CAAGCCTCAAGGCTGGGGGTTCCCGTGGGTATTCTCTCAGCCGGGATGGT 350
TGCCTCTAGCGTGGGACAGATCTGCACGGCTCCAGCGGAGACCAGTCACC 400
CTGTGCTGCTGACTGTGGAGCAGAGAAAGAAGCTGTCTTCCCTGTTAGAG 450
TTTGCTCAGTATTTATTGGCACACAGTATGTTCTCCCGTCTTTCCTTCTG 500
TCAAGAATTATGGAAAATACAGAGTTCTTTGTTGCTTGAAGCGGTGTGGC 550
ATCTTCACGTACAAGGCATTGTGAGCCTGCAAGAGCTGCTGGAAAGCCAT 600
CCCGACATGCATGCTGTGGGATCGTGGCTCTTCAGGAATCTGTGCTGCCT 650
TTGTGAACAGATGGAAGCATCCTGCCAGCATGCTGACGTCGCCAGGGCCA 700
TGCTTTCTGATTTTGTTCAAATGTTTGTTTTGAGGGGATTTCAGAAAAAC 750
TCAGATCTGAGAAGAACTGTGGAGCCTGAAAAAATGCCGCAGGTCACGGT 800
TGATGTACTGCAGAGAATGCTGATTTTTGCACTTGACGCTTTGGCTGCTG 850
GAGTACAGGAGGAGTCCTCCACTCACAAGATCGTGAGGTGCTGGTTCGGA 900
GTGTTCAGTGGACACACGCTTGGCAGTGTAATTTCCACAGATCCTCTGAA 950
GAGGTTCTTCAGTCATACCCTGACTCAGATACTCACTCACAGCCCTGTGC 1000
TGAAAGCATCTGATGCTGTTCAGATGCAGAGAGAGTGGAGCTTTGCGCGG 1050
ACACACCCTCTGCTCACCTCACTGTACCGCAGGCTCTTTGTGATGCTGAG 1100
TGCAGAGGAGTTGGTTGGCCATTTGCAAGAAGTTCTGGAAACGCAGGAGG 1150
TTCACTGGCAGAGAGTGCTCTCCTTTGTGTCTGCCCTGGTTGTCTGCTTT 1200
CCAGAAGCGCAGCAGCTGCTTGAAGACTGGGTGGCGCGTTTGATGGCCCA 1250
GGCATTCGAGAGCTGCCAGCTGGACAGCATGGTCACTGCGTTCCTGGTTG 1300
TGCGCCAGGCAGCACTGGAGGGCCCCTCTGCGTTCCTGTCATATGCAGAC 1350
TGGTTCAAGGCCTCCTTTGGGAGCACACGAGGCTACCATGGCTGCAGCAA 1400
GAAGGCCCTGGTCTTCCTGTTTACGTTCTTGTCAGAACTCGTGCCTTTTG 1450
AGTCTCCCCGGTACCTGCAGGTGCACATTCTCCACCCACCCCTGGTTCCC 1500
GGCAAGTACCGCTCCCTCCTCACAGACTACATCTCATTGGCCAAGACACG 1550
GCTGGCCGACCTCAAGGTTTCTATAGAAAACATGGGACTCTACGAGGATT 1600
TGTCATCAGCTGGGGACATTACTGAGCCCCACAGCCAAGCTCTTCAGGAT 1650
GTTGAAAAGGCCATCATGGTGTTTGAGCATACGGGGAACATCCCAGTCAC 1700
CGTCATGGAGGCCAGCATATTCAGGAGGCCTTACTACGTGTCCCACTTCC 1750
TCCCCGCCCTGCTCACACCTCGAGTGCTCCCCAAAGTCCCTGACTCCCGT 1800
GTGGCGTTTATAGAGTCTCTGAAGAGAGCAGATAAAATCCCCCCATCTCT 1850
GTACTCCACCTACTGCCAGGCCTGCTCTGCTGCTGAAGAGAAGCCAGAAG 1900
ATGCAGCCCTGGGAGTGAGGGCAGAACCCAACTCTGCTGAGGAGCCCCTG 1950
GGACAGCTCACAGCTGCACTGGGAGAGCTGAGAGCCTCCATGACAGACCC 2000
CAGCCAGCGTGATGTTATATCGGCACAGGTGGCAGTGATTTCTGAAAGAC 2050
TGAGGGCTGTCCTGGGCCACAATGAGGATGACAGCAGCGTTGAGATATCA 2100
AAGATTCAGCTCAGCATCAACACGCCGAGACTGGAGCCACGGGAACACAT 2150
GGCTGTGGACCTCCTGCTGACGTCTTTCTGTCAGAACCTGATGGCTGCCT 2200
CCAGTGTCGCTCCCCCGGAGAGGCCGGGTCCCTGGGCTGCCCTCTTCGTG 2250
AGGACCATGTGTGGACGTGTGCTCCCTGCAGTGCTCACCCGGCTCTGCCA 2300
GCTGCTCCGTCACCAGGGCCCGAGCCTGAGTGCCCCACATGTGCTGGGGT 2350
TGGCTGCCCTGGCCGTGCACCTGGGTGAGTCCAGGTCTGCGCTCCCAGAG 2400
GTGGATGTGGGTCCTCCTGCACCTGGTGCTGGCCTTCCTGTCCCTGCGCT 2450
CTTTGACAGCCTCCTGACCTGTAGGACGAGGGATTCCTTGTTCTTCTGCC 2500
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10/540904

FANCA Reference Protein Sequence

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MSDSWVPNSASGQDPGGRRRAWAELLAGRVKREKYNPERAQKLKESAVRL 50
LRSHQDLNALLLEVEGPLCKKLSLSKVIDCDSSEAYANHSSSFIGSALQD 100
QASRLGVPVGILSAGMVASSVGQICTAPAETSHPVLLTVEQRKKLSSLLE 150
FAQYLLAHSMFSRLSFCQELWKIQSSLLLEAVWHLHVQGIVSLQELLESH 200
PDMHAVGSWLFRNLCCLCEQMEASCQHADVARAMLSDFVQMFVLRGFQKN 250
SDLRRTVEPEKMPQVTVDVLQRMLIFALDALAAGVQEESSTHKIVRCWFG 300
VFSGHTLGSVISTDPLKRFFSHTLTQILTHSPVLKASDAVQMQREWSFAR 350
THPLLTSLYRRLFVMLSAEELVGHLQEVLETQEVHWQRVLSFVSALVVCF 400
PEAQQLLEDWVARLMAQAFESCQLDSMVTAFLVVRQAALEGPSAFLSYAD 450
WFKASFGSTRGYHGCSKKALVFLFTFLSELVPFESPRYLQVHILHPPLVP 500
GKYRSLLTDYISLAKTRLADLKVSIENMGLYEDLSSAGDITEPHSQALQD 550
VEKAIMVFEHTGNIPVTVMEASIFRRPYYVSHFLPALLTPRVLPKVPDSR 600
VAFIESLKRADKIPPSLYSTYCQACSAAEEKPEDAALGVRAEPNSAEEPL 650
GQLTAALGELRASMTDPSQRDVISAQVAVISERLRAVLGHNEDDSSVEIS 700
KIQLSINTPRLEPREHMAVDLLLTSFCQNLMAASSVAPPERPGPWAALFV 750
RTMCGRVLPAVLTRLCQLLRHQGPSLSAPHVLGLAALAVHLGESRSALPE 800
VDVGPPAPGAGLPVPALFDSLLTCRTRDSLFFCLKFCTAAISYSLCKFSS 850
QSRDTLCSCLSPGLIKKFQFLMFRLFSEARQALSEEDVASLSWRPLHLPS 900
ADWQRAALSLWTHRTFREVLKEEDVHLTYQDWLHLELEIQPEADALSDTE 950
RQDFHQWAIHEHFLPESSASGGCDGDLQAACTILVNALMDFHQSSRSYDH 1000
SENSDLVFGGRTGNEDIISRLQEMVADLELQQDLIVPLGHTPSQEHFLFE 1050
IFRRRLQALTSGWSVAASLQRQRELLMYKRILLRLPSSVLCGSSFQAEQP 1100
ITARCEQFFHLVNSEMRNFCSHGGALTQDITAHFFRGLLNACLRSRDPSL 1150
MVDFILAKCQTKCPLILTSALVWWPSLEPVLLCRWRRHCQSPLPRELQKL 1200
QEGRQFASDFLSPEAASPAPNPDWLSAAALHFAIQQVREENIRKQLKKLD 1250
CEREELLVFLFFFSLMGLLSSHLTSNSTTDLPKAFHVCAAILECLEKRKI 1300
SWLALFQLTESDLRLGRLLLRVAPDQHTRLLPFAFYSLLSYFHEDAAIRE 1350
EAFLHVAVDMYLKLVQLFVAGDTSTVSPPAGRSLELKGQGNPVELITKAR 1400
LFLLQLIPRCPKKSFSHVAELLADRGDCDPEVSAALQSRQQAAPDADLSQ 1450
EPHLF. 1456
```

10/540904

FANCC Reference cDNA Sequence

FIGURE 6A

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ATGGCTCAAGATTCAGTAGATCTTTCTTGTGATTATCAGTTTTGGATGCA 50
GAAGCTTTCTGTATGGGATCAGGCTTCCACTTTGGAAACCCAGCAAGACA 100
CCTGTCTTCACGTGGCTCAGTTCCAGGAGTTCCTAAGGAAGATGTATGAA 150>
GCCTTGAAAGAGATGGATTCTAATACAGTCATTGAAAGATTCCCCACAAT 200>
TGGTCAACTGTTGGCAAAAGCTTGTTGGAATCCTTTTATTTTAGCATATG 250>
ATGAAAGCCAAAAAATTCTAATATGGTGCTTATGTTGTCTAATTAACAAA 300>
GAACCACAGAATTCTGGACAATCAAAACTTAACTCCTGGATACAGGGTGT 350>
ATTATCTCATATACTTTCAGCACTCAGATTTGATAAAGAAGTTGCTCTTT 400>
TCACTCAAGGTCTTGGGTATGCACCTATAGATTACTATCCTGGTTTGCTT 450>
AAAAATATGGTTTTATCATTAGCGTCTGAACTCAGAGAGAATCATCTTAA 500>
TGGATTTAACACTCAAAGGCGAATGGCTCCCGAGCGAGTGGCGTCCCTGT 550>
CACGAGTTTGTGTCCCACTTATTACCCTGACAGATGTTGACCCCCTGGTG 600>
GAGGCTCTCCTCATCTGTCATGGACGTGAACCTCAGGAAATCCTCCAGCC 650>
AGAGTTCTTTGAGGCTGTAAACGAGGCCATTTTGCTGAAGAAGATTTCTC 700>
TCCCCATGTCAGCTGTAGTCTGCCTCTGGCTTCGGCACCTTCCCAGCCTT 750>
GAAAAAGCAATGCTGCATCTTTTTGAAAAGCTAATCTCCAGTGAGAGAAA 800>
TTGTCTGAGAAGGATCGAATGCTTTATAAAAGATTCATCGCTGCCTCAAG 850>
CAGCCTGCCACCCTGCCATATTCCGGGTTGTTGATGAGATGTTCAGGTGT 900>
GCACTCCTGGAAACCGATGGGGCCCTGGAAATCATAGCCACTATTCAGGT 1000>
GTTTACGCAGTGCTTTGTAGAAGCTCTGGAGAAAGCAAGCAAGCAGCTGC 1050>
GGTTTGCACTCAAGACCTACTTTCCTTACACTTCTCCATCTCTTGCCATG 1100>
GTGCTGCTGCAAGACCCTCAAGATATCCCTCGGGGACACTGGCTCCAGAC 1150>
ACTGAAGCATATTTCTGAACTGCTCAGAGAAGCAGTTGAAGACCAGACTC 1200>
ATGGGTCCTGCGGAGGTCCCTTTGAGAGCTGGTTCCTGTTCATTCACTTC 1250>
GGAGGATGGGCTGAGATGGTGGCAGAGCAATTACTGATGTCGGCAGCCGA 1300>
ACCCCCCACGGCCCTGCTGTGGCTCTTGGCCTTCTACTACGGCCCCCGTG 1350>
ATGGGAGGCAGAGAGCACAGACTATGGTCCAGGTGAAGGCCGTGCTGGGC 1400>
CACCTCCTGGCAATGTCCAGAAGCAGCAGCCTCTCAGCCCAGGACCTGCA 1450>
GACGGTAGCAGGACAGGGCACAGACACAGACCTCAGAGCTCCTGCACAAC 1500>
AGCTGATCAGGCACCTTCTCCTCAACTTCCTGCTCTGGGCTCCTGGAGGC 1550>
CACACGATCGCCTGGGATGTCATCACCCTGATGGCTCACACTGCTGAGAT 1600>
AACTCACGAGATCATTGGCTTTCTTGACCAGACCTTGTACAGATGGAATC 1650>
GTCTTGGCATTGAAAGCCCTAGATCAGAAAAACTGGCCCGAGAGCTCCTT 1700>
AAAGAGCTGCGAACTCAAGTCTAG 1724
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10/540904

FANCC Reference Protein Sequence
FIGURE 6B

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MAQDSVDLSCDYQFWMQKLSVWDQASTLETQQDTCLHVAQFQEFLRKMYE 50
ALKEMDSNTVIERFPTIGQLLAKACWNPFILAYDESQKILIWCLCCLINK 100
EPQNSGQSKLNSWIQGVLSHILSALRFDKEVALFTQGLGYAPIDYYPGLL 150
KNMVLSLASELRENHLNGFNTQRRMAPERVASLSRVCVPLITLTDVDPLV 200
EALLICHGREPQEILQPEFFEAVNEAILLKKISLPMSAVVCLWLRHLPSL 250
EKAMLHLFEKLISSERNCLRRIECFIKDSSLPQAACHPAIFRVVDEMFRC 300
ALLETDGALEIIATIQVFTQCFVEALEKASKQLRFALKTYFPYTSPSLAM 350
VLLQDPQDIPRGHWLQTLKHISELLREAVEDQTHGSCGGPFESWFLFIHF 400
GGWAEMVAEQLLMSAAEPPTALLWLLAFYYGPRDGRQRAQTMVQVKAVLG 450
HLLAMSRSSSLSAQDLQTVAGQGTDTDLRAPAQQLIRHLLLNFLLWAPGG 500
HTIAWDVITLMAHTAEITHEIIGFLDQTLYRWNRLGIESPRSEKLARELL 550
KELRTQV. 558
```

10/540904

FANCD2 Reference cDNA Sequence

FIGURE 7A

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CTTCTTAAGATATCAGGAATTATTCTTAAAACGGGAGAGAGTCAGAATCA 200
ACTAGCTGTGGATCAAATAGCTTTCCAAAAGAAGCTCTTTCAGACCCTGA 250
GGAGACACCCTTCCTATCCCAAAATAATAGAAGAATTTGTTAGTGGCCTG 300
GAGTCTTACATTGAGGATGAAGACAGTTTCAGGAACTGCCTTTTGTCTTG 350
TGAGCGTCTGCAGGATGAGGAAGCCAGTATGGGTGCATCTTATTCTAAGA 400
GTCTCATCAAACTGCTTCTGGGGATTGACATACTGCAGCCTGCCATTATC 450
AAAACCTTATTTGAGAAGTTGCCAGAATATTTTTTTGAAAACAAGAACAG 500
TGATGAAATCAACATACCTCGACTCATTGTCAGTCAACTAAAATGGCTTG 550
ACAGAGTTGTGGATGGCAAGGACCTCACCACCAAGATCATGCAGCTGATC 600
AGTATTGCTCCAGAGAACCTGCAGCATGACATCATCACCAGCCTACCTGA 650
GATCCTAGGGGATTCCCAGCACGCTGATGTGGGGAAAGAACTCAGTGACC 700
TACTGATAGAGAATACTTCACTCACTGTCCCAATCCTGGATGTCCTTTCA 750
AGCCTCCGACTTGACCCAAACTTCCTATTGAAGGTTCGCCAGTTGGTGAT 800
GGATAAGTTGTCGTCTATTAGATTGGAGGATTTACCTGTGATAATAAAGT 850
TCATTCTTCATTCCGTAACAGCCATGGATACACTTGAGGTAATTTCTGAG 900
CTTCGGGAGAAGTTGGATCTGCAGCATTGTGTTTTGCCATCACGGTTACA 950
GGCTTCCCAAGTAAAGTTGAAAAGTAAAGGACGAGCAAGTTCCTCAGGAA 1000
ATCAAGAAAGCAGCGGTCAGAGCTGTATTATTCTCCTCTTTGATGTAATA 1050
AAGTCAGCTATTAGATATGAGAAAACCATTTCAGAAGCCTGGATTAAGGC 1100
AATTGAAAACACTGCCTCAGTATCTGAACACAAGGTGTTTGACCTGGTGA 1150
TGCTTTTCATCATCTATAGCACCAATACTCAGACAAAGAAGTACATTGAC 1200
AGGGTGCTAAGAAATAAGATTCGATCAGGCTGCATTCAAGAACAGCTGCT 1250
CCAGAGTACATTCTCTGTTCATTACTTAGTTCTTAAGGATATGTGTTCAT 1300
CCATTCTGTCGCTGGCTCAGAGTTTGCTTCACTCTCTAGACCAGAGTATA 1350
ATTTCATTTGGCAGTCTCCTATACAAATATGCATTTAAGTTTTTTGACAC 1400
GTACTGCCAGCAGGAAGTGGTTGGTGCCTTAGTGACCCATATCTGCAGTG 1450
GGAATGAAGCTGAAGTTGATACTGCCTTAGATGTCCTTCTAGAGTTGGTA 1500
GTGTTAAACCCATCTGCTATGATGATGAATGCTGTCTTTGTAAAGGGCAT 1550
TTTAGATTATCTGGATAACATATCCCCTCAGCAAATACGAAAACTCTTCT 1600
ATGTTCTCAGCACACTGGCATTTAGCAAACAGAATGAAGCCAGCAGCCAC 1650
ATCCAGGATGACATGCACTTGGTGATAAGAAAGCAGCTCTCTAGCACCGT 1700
ATTCAAGTACAAGCTCATTGGGATTATTGGTGCTGTGACCATGGCTGGCA 1750
TCATGGCGGCAGACAGAAGTGAATCACCTAGTTTGACCCAAGAGAGAGCC 1800
AACCTGAGCGATGAGCAGTGCACACAGGTGACCTCCTTGTTGCAGTTGGT 1850
TCATTCCTGCAGTGAGCAGTCTCCTCAGGCCTCTGCACTTTACTATGATG 1900
AATTTGCCAACCTGATCCAACATGAAAAGCTGGATCCAAAAGCCCTGGAA 1950
TGGGTTGGGCATACCATCTGTAATGATTTCCAGGATGCCTTCGTAGTGGA 2000
CTCCTGTGTTGTTCCGGAAGGTGACTTTCCATTTCCTGTGAAAGCACTGT 2050
ACGGACTGGAAGAATACGACACTCAGGATGGGATTGCCATAAACCTCCTG 2100
CCGCTGCTGTTTTCTCAGGACTTTGCAAAAGATGGGGGTCCGGTGACCTC 2150
ACAGGAATCAGGCCAAAAATTGGTGTCTCCGCTGTGCCTGGCTCCGTATT 2200
TCCGGTTACTGAGACTTTGTGTGGAGAGACAGCATAACGGAAACTTGGAG 2250
GAGATTGATGGTCTACTAGATTGTCCTATATTCCTAACTGACCTGGAGCC 2300
TGGAGAGAAGTTGGAGTCCATGTCTGCTAAAGAGCGTTCATTCATGTGTT 2350
CTCTCATATTTCTTACTCTCAACTGGTTCCGAGAGATTGTAAATGCCTTC 2400
TGCCAGGAAACATCACCTGAGATGAAGGGGAAGGTGCTCACTCGGTTAAA 2450
GCACATTGTAGAATTGCAAATAATCCTGGAAAAGTACTTGGCAGTCACCC 2500
CAGACTATGTCCCTCCTCTTGGAAACTTTGATGTGGAAACTTTAGATATA 2550
ACACCTCATACTGTTACTGCTATTTCAGCAAAAATCAGAAAGAAAGGAAA 2600
AATAGAAAGGAAACAAAAAACAGATGGCAGCAAGACATCCTCCTCTGACA 2650
CACTTTCAGAAGAGAAAAATTCAGAATGTGACCCTACGCCATCTCATAGA 2700
GGCCAGCTAAACAAGGAGTTCACAGGGAAGGAAGAAAAGACATCATTGTT 2750
ACTACATAATTCCCATGCTTTTTTCCGAGAGCTGGACATTGAGGTCTTCT 2800
CTATTCTACATTGTGGACTTGTGACGAAGTTCATCTTAGATACTGAAATG 2850
CACACTGAAGCTACAGAAGTTGTGCAACTTGGGCCCCCTGAGCTGCTTTT 2900
CTTGCTGGAAGATCTCTCCCAGAAGCTGGAGAGTATGCTGACACCTCCTA 2950
TTGCCAGGAGAGTCCCCTTTCTCAAGAACAAAGGAAGCCGGAATATTGGA 3000
TTCTCACATCTCCAACAGAGATCTGCCCAAGAAATTGTTCATTGTGTTTT 3050
TCAACTGCTGACCCCAATGTGTAACCACCTGGAGAACATTCACAACTATT 3100
TTCAGTGTTTAGCTGCTGAGAATCACGGTGTAGTTGATGGACCAGGAGTG 3150
AAAGTTCAGGAGTACCACATAATGTCTTCCTGCTATCAGAGGCTGCTGCA 3200
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10/540904

FIGURE 7A

GATTTTTCATGGGCTTTTTGCTTGGAGTGGATTTTCTCAACCTGAAAATC 3250
AGAATTTACTGTATTCAGCCCTCCATGTCCTTAGTAGCCGACTGAAACAG 3300
GGAGAACACAGCCAGCCTTTGGAGGAACTACTCAGCCAGAGCGTCCATTA 3350
CTTGCAGAATTTCCATCAAAGCATTCCCAGTTTCCAGTGTGCTCTTTATC 3400
TCATCAGACTTTTGATGGTTATTTTGGAGAAATCAACAGCTTCTGCTCAG 3450
AACAAAGAAAAAATTGCTTCCCTTGCCAGACAATTCCTCTGTCGGGTGTG 3500
GCCAAGTGGGGATAAAGAGAAGAGCAACATCTCTAATGACCAGCTCCATG 3550
CTCTGCTCTGTATCTACCTGGAGCACACAGAGAGCATTCTGAAGGCCATA 3600
GAGGAGATTGCTGGTGTTGGTGTCCCAGAACTGATCAACTCTCCTAAAGA 3650
TGCATCTTCCTCCACATTCCCTACACTGACCAGGCATACTTTTGTTGTTT 3700
TCTTCCGTGTGATGATGGCTGAACTAGAGAAGACGGTGAAAAAAATTGAG 3750
CCTGGCACAGCAGCAGACTCGCAGCAGATTCATGAAGAGAAACTCCTCTA 3800
CTGGAACATGGCTGTTCGAGACTTCAGTATCCTCATCAACTTGATAAAGG 3850
TATTTGATAGTCATCCTGTTCTGCATGTATGTTTGAAGTATGGGCGTCTC 3900
TTTGTGGAAGCATTTCTGAAGCAATGTATGCCGCTCCTAGACTTCAGTTT 3950
TAGAAAACACCGGGAAGATGTTCTGAGCTTACTGGAAACCTTCCAGTTGG 4000
ACACAAGGCTGCTTCATCACCTGTGTGGCATTCCAAGATTCACCAGGAC 4050
ACGAGACTCACCCAACATGTGCCTCTGCTCAAAAAGACCCTGGAACTTTT 4100
AGTTTGCAGAGTCAAAGCTATGCTCACTCTCAACAATTGTAGAGAGGCTT 4150
TCTGGCTGGGCAATCTAAAAAACCGGGACTTGCAGGGTGAAGAGATTAAG 4200
TCCCAAAATTCCCAGGAGAGCACAGCAGATGAGAGTGAGGATGACATGTC 4250
ATCCCAGGCCTCCAAGAGCAAAGCCACTGAGGATGGTGAAGAAGACGAAG 4300
TAAGTGCTGGAGAAAAGGAGCAAGATAGTGATGAGAGTTATGATGACTCT 4350
GATTAG 4356

FANCD2 Reference Protein Sequence

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MVSKRRLSKSEDKESLTEDASKTRKQPLSKKTKKSHIANEVEENDSIFVK 50
LLKISGIILKTGESQNQLAVDQIAFQKKLFQTLRRHPSYPKIIEEFVSGL 100
ESYIEDEDSFRNCLLSCERLQDEEASMGASYSKSLIKLLLGIDILQPAII 150
KTLFEKLPEYFFENKNSDEINIPRLIVSQLKWLDRVVDGKDLTTKIMQLI 200
SIAPENLQHDIITSLPEILGDSQHADVGKELSDLLIENTSLTVPILDVLS 250
SLRLDPNFLLKVRQLVMDKLSSIRLEDLPVIIKFILHSVTAMDTLEVISE 300
LREKLDLQHCVLPSRLQASQVKLKSKGRASSSGNQESSGQSCIILLFDVI 350
KSAIRYEKTISEAWIKAIENTASVSEHKVFDLVMLFIIYSTNTQTKKYID 400
RVLRNKIRSGCIQEQLLQSTFSVHYLVLKDMCSSILSLAQSLLHSLDQSI 450
ISFGSLLYKYAFKFFDTYCQQEVVGALVTHICSGNEAEVDTALDVLLELV 500
VLNPSAMMMNAVFVKGILDYLDNISPQQIRKLFYVLSTLAFSKQNEASSH 550
IQDDMHLVIRKQLSSTVFKYKLIGIIGAVTMAGIMAADRSESPSLTQERA 600
NLSDEQCTQVTSLLQLVHSCSEQSPQASALYYDEFANLIQHEKLDPKALE 650
WVGHTICNDFQDAFVVDSCVVPEGDFPFPVKALYGLEEYDTQDGIAINLL 700
PLLFSQDFAKDGGPVTSQESGQKLVSPLCLAPYFRLLRLCVERQHNGNLE 750
EIDGLLDCPIFLTDLEPGEKLESMSAKERSFMCSLIFLTLNWFREIVNAF 800
CQETSPEMKGKVLTRLKHIVELQIILEKYLAVTPDYVPPLGNFDVETLDI 850
TPHTVTAISAKIRKKGKIERKQKTDGSKTSSSDTLSEEKNSECDPTPSHR 900
GQLNKEFTGKEEKTSLLLHNSHAFFRELDIEVFSILHCGLVTKFILDTEM 950
HTEATEVVQLGPPELLFLLEDLSQKLESMLTPPIARRVPFLKNKGSRNIG 1000
FSHLQQRSAQEIVHCVFQLLTPMCNHLENIHNYFQCLAAENHGVVDGPGV 1050
KVQEYHIMSSCYQRLLQIFHGLFAWSGFSQPENQNLLYSALHVLSSRLKQ 1100
GEHSQPLEELLSQSVHYLQNFHQSIPSFQCALYLIRLLMVILEKSTASAQ 1150
NKEKIASLARQFLCRVWPSGDKEKSNISNDQLHALLCIYLEHTESILKAI 1200
EEIAGVGVPELINSPKDASSSTFPTLTRHTFVVFFRVMMAELEKTVKKIE 1250
PGTAADSQQIHEEKLLYWNMAVRDFSILINLIKVFDSHPVLHVCLKYGRL 1300
FVEAFLKQCMPLLDFSFRKHREDVLSLLETFQLDTRLLHHLCGHSKIHQD 1350
TRLTQHVPLLKKTLELLVCRVKAMLTLNNCREAFWLGNLKNRDLQGEEIK 1400
SQNSQESTADESEDDMSSQASKSKATEDGEEDEVSAGEKEQDSDESYDDS 1450
D. 1452
```

10/540904

FANCE Reference cDNA Sequence

FIGURE 8A

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ATGGCGACACCGGACGCGGGGCTCCCTGGGGCTGAGGGCGTGGAGCCGGC 50
GCCCTGGGCGCAGCTGGAGGCCCCCGCCCGCCTCCTGCTGCAGGCGCTGC 100
AGGCGGGGCCTGAGGGGGCGCGGCGCGGCCTGGGGGTGCTCCGGGCGCTG 150
GGCAGCCGCGGCTGGGAGCCCTTCGACTGGGGTCGCTTGCTCGAGGCCCT 200
GTGCCGGGAGGAGCCGGTCGTGCAGGGGCCTGACGGCCGTCTGGAGCTGA 250
AACCACTGTTGCTGCGATTGCCCCGGATATGCCAGAGGAACCTGATGTCC 300
CTGCTGATGGCCGTTCGGCCATCGCTGCCGGAAAGTGGGCTCCTCTCTGT 350
GCTGCAGATTGCCCAGCAGGACCTAGCCCCTGACCCCGATGCCTGGCTCC 400
GTGCCCTGGGGGAATTGCTGCGAAGGGATTTGGGGGTGGGGACCTCCATG 450
GAGGGAGCTTCTCCACTGTCTGAAAGATGCCAGAGACAGCTCCAAAGTCT 500
ATGTAGGGGGCTGGGCCTGGGGGCAGGAGGTTGAAATCCCCCCAGGCTC 550
CAGACCCTGAAGAAGAGGAGAACAGGGACTCCCAGCAGCCTGGGAAACGC 600
AGAAAGGACTCAGAGGAAGAGGCTGCCAGTCCTGAGGGGAAGAGGGTCCC 650
CAAAAGATTACGGTGTTGGGAAGAGGAAGAAGATCATGAGAAGGAGAGAC 700
CCGAACATAAGTCACTGGAATCCCTGGCAGATGGAGGAAGTGCATCTCCT 750
ATTAAGGACCAGCCTGTCATGGCAGTTAAGACTGGCGAGGACGGTTCGAA 800
TCTGGATGATGCTAAAGGTCTGGCTGAGAGTTTGGAGTTGCCCAAAGCTA 850
TCCAGGACCAGCTTCCCAGGCTGCAGCAGCTGCTGAAGACCTTGGAGGAG 900
GGGTTAGAGGGATTGGAGGATGCCCCCCCAGTTGAGCTACAGCTTCTTCA 1000
CGAATGTAGTCCCAGCCAGATGGACTTGCTGTGTGCCCAGCTGCAGCTCC 1050
CTCAGCTCTCAGACCTCGGTCTCCTGCGGCTCTGCACCTGGCTGCTGGCC 1100
CTTTCACCTGATCTCAGCCTCAGCAATGCTACTGTGCTGACCAGAAGCCT 1150
CTTTCTTGGACGGATCCTCTCCTTGACTTCCTCAGCCTCCCGCCTGCTTA 1200
CAACTGCCCTGACCTCCTTCTGTGCCAAATATACATACCCTGTCTGCAGC 1250
GCCCTCCTTGACCCTGTGCTCCAGGCCCCAGGCACAGGTCCTGCTCAAAC 1300
AGAGTTACTGTGTTGCCTTGTGAAGATGGAGTCCCTGGAGCCAGATGCAC 1350
AGGTTCTAATGCTGGGACAGATCTTGGAGCTGCCCTGGAAGGAGGAAACT 1400
TTCTTGGTGTTGCAGTCACTCCTAGAGCGGCAGGTGGAGATGACCCCTGA 1450
GAAGTTCAGTGTCTTAATGGAGAAGCTCTGTAAAAAGGGGCTGGCAGCCA 1500
CCACCTCCATGGCCTATGCCAAGCTCATGCTGACAGTGATGACCAAGTAT 1550
CAGGCTAACATCACTGAGACCCAGAGGCTGGGCCTGGCTATGGCCCTAGA 1600
ACCTAACACCACCTTCCTGAGGAAGTCCCTGAAGGCCGCCTTGAAACATT 1650
TGGGCCCCTGA 1661
```

10/540904

FIGURE 8B

FANCE Reference Protein Sequence

FANCA	FANCC	FANCD2	FANCE	FANCF	FANCG
cDNA	cDNA	cDNA	cDNA	cDNA	cDNA
Protein	Protein	Protein	Protein	Protein	Protein

```
MATPDAGLPGAEGVEPAPWAQLEAPARLLLQALQAGPEGARRGLGVLRAL 50
GSRGWEPFDWGRLLEALCREEPVVQGPDGRLELKPLLLRLPRICQRNLMS 100
LLMAVRPSLPESGLLSVLQIAQQDLAPDPDAWLRALGELLRRDLGVGTSM 150
EGASPLSERCQRQLQSLCRGLGLGGRRLKSPQAPDPEEEENRDSQQPGKR 200
RKDSEEEAASPEGKRVPKRLRCWEEEEDHEKERPEHKSLESLADGGSASP 250
IKDQPVMAVKTGEDGSNLDDAKGLAESLELPKAIQDQLPRLQQLLKTLEE 300
GLEGLEDAPPVELQLLHECSPSQMDLLCAQLQLPQLSDLGLLRLCTWLLA 350
LSPDLSLSNATVLTRSLFLGRILSLTSSASRLLTTALTSFCAKYTYPVCS 400
ALLDPVLQAPGTGPAQTELLCCLVKMESLEPDAQVLMLGQILELPWKEET 450
FLVLQSLLERQVEMTPEKFSVLMEKLCKKGLAATTSMAYAKLMLTVMTKY 500
QANITETQRLGLAMALEPNTTFLRKSLKAALKHLGP. 537
```

FANCF Reference cDNA Sequence

FIGURE 9A

```
ATGGAATCCCTTCTGCAGCACCTGGATCGCTTTTCCGAGCTTCTGGCGGT 50
CTCAAGCACTACCTACGTCAGCACCTGGGACCCCGCCACCGTGCGCCGGG 100
CCTTGCAGTGGGCGCGCTACCTGCGCCACATCCATCGGCGCTTTGGTCGG 150
CATGGCCCCATTCGCACGGCTCTGGAGCGGCGGCTGCACAACCAGTGGAG 200
GCAAGAGGGCGGCTTTGGGCGGGGTCCAGTTCCGGGATTAGCGAACTTCC 250
AGGCCCTCGGTCACTGTGACGTCCTGCTCTCTCTGCGCCTGCTGGAGAAC 300
CGGGCCCTCGGGGATGCAGCTCGTTACCACCTGGTGCAGCAACTCTTTCC 350
CGGCCCGGGCGTCCGGGACGCCGATGAGGAGACACTCCAAGAGAGCCTGG 400
CCCGCCTTGCCCGCCGGCGGTCTGCGGTGCACATGCTGCGCTTCAATGGC 450
TATAGAGAGAACCCAAATCTCCAGGAGGACTCTCTGATGAAGACCCAGGC 500
GGAGCTGCTGCTGGAGCGTCTGCAGGAGGTGGGGAAGGCCGAAGCGGAGC 550
GTCCCGCCAGGTTTCTCAGCAGCCTGTGGGAGCGCTTGCCTCAGAACAAC 600
TTCCTGAAGGTGATAGCGGTGGCGCTGTTGCAGCCGCCTTTGTCTCGTCG 650
GCCCCAAGAAGAGTTGGAACCCGGCATCCACAAATCACCTGGAGAGGGGA 700
GCCAAGTGCTAGTCCACTGGCTTCTGGGGAATTCGGAAGTCTTTGCTGCC 750
TTTTGTCGCGCCCTCCCAGCCGGGCTTTTGACTTTAGTGACTAGCCGCCA 800
CCCAGCGCTGTCTCCTGTCTATCTGGGTCTGCTAACAGACTGGGGTCAAC 850
GTTTGCACTATGACCTTCAGAAAGGCATTTGGGTTGGAACTGAGTCCCAA 900
GATGTGCCCTGGGAGGAGTTGCACAATAGGTTTCAAAGCCTCTGTCAGGC 1000
CCCTCCACCTCTGAAAGATAAAGTTCTAACTGCCCTGGAGACCTGTAAAG 1050
CGCAGGATGGAGATTTTGAAGTACCTGGTCTTAGCATCTGGACAGACCTC 1100
TTATTAGCTCTTCGTAGTGGTGCATTTAGGAAAAGACAAGTTTTGGGTCT 1150
CAGCGCAGGCCTCAGTTCTGTATAG 1175
```

10/540904

FIGURE 9B

FANCF Reference Protein Sequence

FANCA	FANCC	FANCD2	FANCE	FANCF	FANCG
cDNA	cDNA	cDNA	cDNA	cDNA	cDNA
Protein	Protein	Protein	Protein	Protein	Protein

```
MESLLQHLDRFSELLAVSSTTYVSTWDPATVRRALQWARYLRHIHRRFGR 50
HGPIRTALERRLHNQWRQEGGFGRGPVPGLANFQALGHCDVLLSLRLLEN 100
RALGDAARYHLVQQLFPGPGVRDADEETLQESLARLARRRSAVHMLRFNG 150
YRENPNLQEDSLMKTQAELLLERLQEVGKAEAERPARFLSSLWERLPQNN 200
FLKVIAVALLQPPLSRRPQEELEPGIHKSPGEGSQVLVHWLLGNSEVFAA 250
FCRALPAGLLTLVTSRHPALSPVYLGLLTDWGQRLHYDLQKGIWVGTESQ 300
DVPWEELHNRFQSLCQAPPPLKDKVLTALETCKAQDGDFEVPGLSIWTDL 350
LLALRSGAFRKRQVLGLSAGLSSV. 375
```

10/540904

FANCG Reference cDNA Sequence

FIGURE 10A

```
ATGTCCCGCCAGACCACCTCTGTGGGCTCCAGCTGCCTGGACCTGTGGAG 50
GGAAAAGAATGACCGGCTCGTTCGACAGGCCAAGGTGGCTCAGAACTCCG 100
GTCTGACTCTGAGGCGACAGCAGTTGGCTCAGGATGCACTGGAAGGGCTC 150
AGAGGGCTCCTCCATAGTCTGCAAGGGCTCCCTGCAGCTGTTCCTGTTCT 200
TCCCTTGGAGCTGACTGTCACCTGCAACTTCATTATCCTGAGGGCAAGCT 250
TGGCCCAGGGTTTCACAGAGGATCAGGCCCAGGATATCCAGCGGAGCCTA 300
GAGAGAGTGCTGGAGACACAGGAGCAGCAGGGGCCCAGGTTGGAACAGGG 350
GCTCAGGGAGCTGTGGGACTCTGTCCTTCGTGCTTCCTGCCTTCTGCCGG 400
AGCTGCTGTCTGCCCTGCACCGCCTGGTTGGCCTGCAGGCTGCCCTCTGG 450
TTGAGTGCTGACCGTCTTGGGGACCTGGCCTTGTTACTAGAGACCCTGAA 500
TGGCAGCCAGAGTGGAGCCTCTAAGGATCTGCTGTTACTTCTGAAAACTT 550
GGAGTCCCCCAGCTGAGGAATTAGATGCTCCATTGACCCTGCAGGATGCC 600
CAGGGATTGAAGGATGTCCTCCTGACAGCATTTGCCTACCGCCAAGGTCT 650
CCAGGAGCTGATCACAGGGAACCCAGACAAGGCACTAAGCAGCCTTCATG 700
AAGCGGCCTCAGGCCTGTGTCCACGGCCTGTGTTGGTCCAGGTGTACACA 750
GCACTGGGGTCCTGTCACCGTAAGATGGGAAATCCACAGAGAGCACTGTT 800
GTACTTGGTTGCAGCCCTGAAAGAGGGATCAGCCTGGGGTCCTCCACTTC 850
TGGAGGCCTCTAGGCTCTATCAGCAACTGGGGGACACAACAGCAGAGCTG 900
GAGAGTCTGGAGCTGCTAGTTGAGGCCTTGAATGTCCCATGCAGTTCCAA 950
AGCCCCGCAGTTTCTCATTGAGGTAGAATTACTACTGCCACCACCTGACC 1000
TAGCCTCACCCCTTCATTGTGGCACTCAGAGCCAGACCAAGCACATACTA 1050
GCAAGCAGGTGCCTACAGACGGGGAGGGCAGGAGACGCTGCAGAGCATTA 1100
CTTGGACCTGCTGGCCCTGTTGCTGGATAGCTCGGAGCCAAGGTTCTCCC 1150
CACCCCCCTCCCCTCCAGGGCCCTGTATGCCTGAGGTGTTTTTGGAGGCA 1200
GCGGTAGCACTGATCCAGGCAGGCAGAGCCCAAGATGCCTTGACTCTATG 1250
TGAGGAGTTGCTCAGCCGCACATCATCTCTGCTACCCAAGATGTCCCGGC 1300
TGTGGGAAGATGCCAGAAAAGGAACCAAGGAACTGCCATACTGCCCACTC 1350
TGGGTCTCTGCCACCCACCTGCTTCAGGGCCAGGCCTGGGTTCAACTGGG 1400
TGCCCAAAAAGTGGCAATTAGTGAATTTAGCAGGTGCCTCGAGCTGCTCT 1450
TCCGGGCCACACCTGAGGAAAAAGAACAAGGGGCAGCTTTCAACTGTGAG 1500
CAGGGATGTAAGTCAGATGCGGCACTGCAGCAGCTTCGGGCAGCCGCCCT 1550
AATTAGTCGTGGACTGGAATGGGTAGCCAGCGGCCAGGATACCAAAGCCT 1600
TACAGGACTTCCTCCTCAGTGTGCAGATGTGCCCAGGTAATCGAGACACT 1650
TACTTTCACCTGCTTCAGACTCTGAAGAGGCTAGATCGGAGGGATGAGGC 1700
CACTGCACTCTGGTGGAGGCTGGAGGCCCAAACTAAGGGGTCACATGAAG 1750
ATGCTCTGTGGTCTCTCCCCCTGTACCTAGAAAGCTATTTGAGCTGGATC 1800
CGTCCCTCTGATCGTGACGCCTTCCTTGAAGAATTTCGGACATCTCTGCC 1850
AAAGTCTTGTGACCTGTAG 1869
```

10/540904

FANCG Reference Protein Sequence

FIGURE 10B

FANCA	FANCC	FANCD2	FANCE	FANCF	FANCG
cDNA	cDNA	cDNA	cDNA	cDNA	cDNA
Protein	Protein	Protein	Protein	Protein	Protein

```
MSRQTTSVGSSCLDLWREKNDRLVRQAKVAQNSGLTLRRQQLAQDALEGL 50
RGLLHSLQGLPAAVPVLPLELTVTCNFIILRASLAQGFTEDQAQDIQRSL 100
ERVLETQEQQGPRLEQGLRELWDSVLRASCLLPELLSALHRLVGLQAALW 150
LSADRLGDLALLLETLNGSQSGASKDLLLLLKTWSPPAEELDAPLTLQDA 200
QGLKDVLLTAFAYRQGLQELITGNPDKALSSLHEAASGLCPRPVLVQVYT 250
ALGSCHRKMGNPQRALLYLVAALKEGSAWGPPLLEASRLYQQLGDTTAEL 300
ESLELLVEALNVPCSSKAPQFLIEVELLLPPPDLASPLHCGTQSQTKHIL 350
ASRCLQTGRAGDAAEHYLDLLALLLDSSEPRFSPPPSPPGPCMPEVFLEA 400
AVALIQAGRAQDALTLCEELLSRTSSLLPKMSRLWEDARKGTKELPYCPL 450
WVSATHLLQGQAWVQLGAQKVAISEFSRCLELLFRATPEEKEQGAAFNCE 500
QGCKSDAALQQLRAAALISRGLEWVASGQDTKALQDFLLSVQMCPGNRDT 550
YFHLLQTLKRLDRRDEATALWWRLEAQTKGSHEDALWSLPLYLESYLSWI 600
RPSDRDAFLEEFRTSLPKSCDL. 623
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